



PRINTERS FAQ

Q I've noticed that some printers support print languages. What are these?

A A printer needs to be told exactly where to place toner or ink on a page. For cheaper printers, Windows does all the ink and toner placement calculations. While this keeps the cost of the printer down, as it doesn't need much processing power, it places a burden on the PC.

Pricier laser printers have faster processors, their own memory and support for a print language, typically Printer Command Language (PCL), Adobe's PostScript or both. A print language consists of commands that perform specific tasks, such as drawing a line. Printers also have resident fonts, so they know what a T looks like and need only to be told where to put it.

When a printer supports a language, print jobs are converted to a list of commands and sent to the printer. The main advantage is that your PC no longer does any of the hard work of controlling the printer directly; it simply generates the necessary command list, while the printer takes care of printing. This tends to speed up the printing process, as the PC generates the commands faster and has no more work to do once it has sent the program to the printer.

A printer language is a standard, so you don't necessarily need a specific driver to print, and even basic devices such as PDAs can create simple print jobs. However, languages begin to appear only on mid-range laser printers.

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REVIEW COMPACT PHOTO INKJET PRINTER

EPSON PictureMate 100

RATING ★★★★★

PRICE £85 inc VAT

SUPPLIER www.savastore.com

DETAILS www.epson.co.uk



Epson's original PictureMate was our favourite compact photo printer, but it was discontinued in favour of two new models. The PictureMate 500, reviewed in *What's New, Shopper* October 2005, retains the original's six-colour inkjet engine, but a preview screen makes it more expensive.

The PictureMate 100 is the new entry-level model. It costs about £50 less than the PictureMate 500, yet it has the same range of memory card slots and supports Epson's optional lithium-ion rechargeable battery. However, it prints with four dye-based colours rather than six pigment inks, and its preview screen is smaller than the 500's.

The 100 and 500 are similar in size and shape, but rather than smart black and silver, the PictureMate 100 is made from lavender and pearlescent white plastics that together remind us of a 1980s tracksuit. Print head alignment is still manual, but the single-page pattern is far quicker than the original PictureMate's lengthy routine.

The printer's LCD screen is small but clear. This is more than can be said for the menu system, which we found harder than most to understand. Screens are icon-based, and some have no explanatory text at all. When making prints from a memory card, it's possible to print a proof sheet or select individual prints and quantities directly on the screen. Basic colour effects such as black and white or sepia prints are available.

Direct printing proved quite rapid, with the PictureMate taking just 13 minutes and 23 seconds to produce six borderless photos from an SD card.



Prints were sharp and detailed, with excellent colour accuracy, but they had a trace of grain and banding.

Unlike the PictureMate 500, the printer itself has no quality setting, so you must connect it to a computer to print at its best. The driver is simple but easy to understand. With Enhance Fine Quality selected, it took 16 minutes and 44 seconds to print our six borderless test photos, but the quality was impressive. Sharpness was visibly improved, banding was minimal and there was surprisingly little grain.

The PictureMate 100 takes a specific PicturePack, which comprises enough glossy paper and ink for 135 photos. Prints work out at 20p each, which is cheaper than most of the competition.

This printer isn't as fast as its dye-sub competitors, but its high-quality photos and range of direct printing options help make it great value.

Simon Handby



Good value to buy and run; compact and easy to use; good prints



Best quality requires a PC; menu could be easier to fathom; naff colour scheme

SPECIFICATIONS Four-colour inkjet, 5,760x1,440dpi maximum resolution, USB Hi-Speed and PictBridge USB interfaces. Part code C11C602002

HOTLIST LASER PRINTER

SAMSUNG ML-2250

RATING ★★★★★

PRICE £93 inc VAT

SUPPLIER www.savastore.com

DETAILS www.samsung.co.uk



Samsung's ML-2250 takes a single 5,000-page-rated consumable, which is enough for 10 reams of paper; each sheet costing 1.33p to print. Print quality is excellent. This printer has 16MB of memory and a 250-sheet input cassette, so it's well specified. You can also upgrade the memory and add networking. This is a great-value printer.



SPECIFICATIONS Mono laser, 1,200dpi, 20ppm maximum speed, USB Hi-Speed interface. Part code ML-2250/XEU

HOTLIST COLOUR LASER PRINTER

EPSON AcuLaser C1100

RATING ★★★★★

PRICE £210 inc VAT

SUPPLIER www.misco.co.uk

DETAILS www.epson.co.uk



Epson's C1100 is reasonably large for a four-pass colour laser, and it's more tricky than many to set up. In our tests it came commendably close to Epson's claimed speeds, but the most welcome discovery was its superb all-round print quality. This is an excellent, inexpensive printer with reasonable running costs.



SPECIFICATIONS Colour laser, 600dpi, 25ppm mono/5ppm colour maximum speed, USB Hi-Speed interface. Part code C11C567001

HOTLIST MONO LASER PRINTER

KYOCERA MITA FS-1920n

RATING ★★★★★

PRICE £474 inc VAT

SUPPLIER www.savastore.com

DETAILS www.kyoceramita.co.uk



This compact laser prints for less than half a penny a page, so it could save you a fortune over its 300,000-page lifetime. Toner cartridges are the only consumable, and each lasts for 15,000 pages. The FS-1920n is simple to maintain, but there's plenty of scope for upgrades if your needs increase.



SPECIFICATIONS Mono laser, 1,800x600dpi, 28ppm maximum speed, 10/100 Ethernet, USB and parallel interfaces. Part code FS-1920N

REVIEW COLOUR LASER PRINTER

XEROX Phaser 6120

RATING ★★

PRICE £342 inc VAT

SUPPLIER www.misco.co.uk
DETAILS www.xerox.co.uk

Xerox has long made laser printers for corporate customers, but the company is producing an increasing number of affordable products to tempt home and small business users. The Phaser 6120 is Xerox's new entry-level model; at under £350, it is the cheapest colour laser it has yet produced.

Unlike the more expensive Phaser 8500 and 6300 ranges, the 6120 is a conventional laser printer that doesn't use Xerox's solid ink system. It's a four-pass device, so to print in colour it must create four separate colour page images. These are combined when the printer transfers them to the page, giving full-colour output.

This kind of printer is generally cheaper to produce than one with a single-pass engine, but there are a couple of downsides. A four-pass engine usually takes four times as long to print in colour, and uses certain components such as the imaging drum four times for every page, shortening its life.

In a four-pass colour laser, we'd expect the drum to last for four times as many mono pages as colour ones, but Xerox's figures say you'll need a replacement after 20,000 mono pages or 10,000 colour. After its original drum and 1,500-page toners are exhausted, each colour page should cost around 8.7p, and each black page just over 1.9p.

The 6120 is more expensive to run than most of the colour lasers in our last Labs round-up in *Shopper* November 2005. It looks very similar to the Konica Minolta Magicolor 2450 which featured in that test, and it produced almost identical times and results in our print tests.



When using the PCL driver, the Phaser 6120 printed our mono text documents in colour with four passes, resulting in bluish-grey text. At 5.2ppm it was very slow. Forcing the driver into greyscale sped it up to 19ppm, but the driver should manage this automatically. At 2.4ppm, this printer's performance on our mixed-colour test was underwhelming. Using the PostScript driver produced slightly slower results in every test.

The 6120 produced good mono text, although its colour prints were a little lacking in vibrancy, and the blue PowerPoint slides in our mixed-colour test suffered from the same dark band we saw with Konica Minolta's Magicolor 2450.

This printer is competitively priced for a network-ready colour laser with PCL and PostScript languages, but we'd rather pay a little more for the Lexmark C522n reviewed on page 28.

Simon Handby

 **Compact; reasonably priced**

 **Slow colour printing; above-average running costs; tries to print text in colour**

SPECIFICATIONS Colour laser printer, 600dpi, 20ppm mono/5ppm colour maximum speed, USB, parallel and 10/100 Ethernet interfaces. **Part code** 6120V_N

HOTLIST MULTIFUNCTION PERIPHERAL

HP Photosmart 3210

RATING ★★★★★

PRICE £179 inc VAT

SUPPLIER www.savastore.com
DETAILS www.hp.co.uk

This MFP has everything you need to tackle creative projects. It produces high-quality, cheap prints very quickly on plain or photo paper.

The scanner has a high resolution and can capture film, although it does a better job with reflective originals and we don't much care for its TWAIN interface.



SPECIFICATIONS 4,800x1,200dpi print resolution, 4,800x4,800dpi scan resolution, USB Hi-Speed PictBridge USB and 10/100 Ethernet interfaces. **Part code** Q5843B

HOTLIST COLOUR LASER MFP

EPSON AcuLaser CX11NF

RATING ★★★★★

PRICE £587 inc VAT

SUPPLIER www.misco.co.uk
DETAILS www.epson.co.uk

Multifunction peripherals based on colour laser printers aren't getting any smaller, but they're finally affordable. This hulking Epson is the best example we've tested. It has built-in fax capability, a good scanner and great print quality. It's easy to install and use, but colour prints could be cheaper.



SPECIFICATIONS 600dpi print resolution, 25ppm mono/5ppm colour maximum speed, 600x600dpi scan resolution, USB Hi-Speed and 10/100 Ethernet interfaces. **Part code** C11C58801DA

BYTE SIZE!



Our round-up of the best new gadgets and software

SANDISK ImageMate 12-in-1 Card Reader/Writer

RATING ★★★★★

PRICE £19 inc VAT

SUPPLIER www.amazon.co.uk
DETAILS www.sandisk.com

Most of us own at least one memory card, for our digital camera, mobile phone or MP3 player. The ImageMate is compatible with 12 formats so will almost certainly support those you need. The small, solid reader is finished in black and silver. It comes with a vertical docking unit for ease of use on a desk, but can be removed for portable duties. It supports USB Hi-Speed so your files will transfer quickly.

There are cheaper memory card readers available, but this one's attractive stand and look make it worth a couple of pounds extra.

Seth Barton



SANDISK Photo Album

RATING ★★

PRICE £31 inc VAT

SUPPLIER www.amazon.co.uk
DETAILS www.sandisk.com

The Photo Album is a memory card reader that connects to your TV or PC. It supports the eight most common memory card formats and attaches to your PC through USB Hi-Speed. It also has composite video and phono outputs for connection to a TV so you can view JPEG images or play MP3 music. It has a basic interface and a remote control.

Sadly, video signals are poor and there is a lot of noise in images. MP3 playback isn't much better and sounds compressed and muted. Most digital cameras have AV outputs that do what the Photo Album does, and you could connect an MP3 player with the right lead. The Photo Album is something you simply don't need.

Seth Barton





REVIEW COLOUR LASER PRINTER

LEXMARK
C522n

RATING ★★★★★

PRICE £391 inc VAT

SUPPLIER <http://uk.insight.com>DETAILS www.lexmark.co.uk

Lexmark recently released several new colour laser printers, of which the C522n is the cheapest. It's priced slightly above entry-level devices, which currently cost as little as £200, but its specifications are much higher. The C522n comes with a standard Ethernet port, and supports PCL6 and PostScript 3 print languages. What's more, it's the least expensive colour laser we've tested with a true 1,200dpi print resolution.

The C522n has a fairly small footprint, but it's a tall printer and weighs a considerable 26kg. Lexmark's setup program offers Suggested and Custom installations. The Custom option can add both PCL and PostScript drivers in one operation, but it didn't allow us to choose a port for the printer and ended up installing it on our notebook's non-existent parallel port.

We tried the Suggested setup, which found the printer on the network and automatically installed its PostScript driver. However, we had to change the port the PCL driver had set up earlier manually.

Unlike the Xerox Phaser 6120, reviewed on page 27, the C522n has a single-pass print engine. In theory, this means it can print mono or colour pages at its full engine speed of 19ppm. Our print tests showed that, as with many single-pass colour lasers, this isn't always the case.

In our mono print tests, the C522n peaked at 17.9ppm when using the PCL driver to print 50 copies of our test letter. This is a reasonable speed, but we've seen faster performances from cheaper colour lasers.



Colour pages are more complicated than mono and the C522n took time to process pages in our mixed-colour document, even though it has a reasonably powerful 312.5MHz processor and 128MB of memory. Using the PCL driver, it was able to deliver all 24 pages at 5.3ppm. This dropped to 4.9ppm during PostScript printing. It was slow to complete our photo tests using either driver.

The C522n isn't the fastest colour laser we've tested, but it produces high-quality prints. Its mono text in particular was very crisp. Colour prints have a pleasant satin finish, but they weren't a match for those of Epson's C1100 (see *Hotlist* on page 26).

As we went to press, an introductory Lexmark offer meant that some online stores were selling the C522n for as little as £194 including VAT. At its regular selling price of £391 it isn't such a sensationally good value, but it's still a great choice.

Simon Handby



Good value; high print quality



Disappointing colour speed; could be cheaper to run

SPECIFICATIONS Colour laser printer, 1,200dpi, 19ppm maximum speed, USB and 10/100 Ethernet interfaces. **Part code** 0022H0061

CHOOSING AN...

INKJET
PRINTER

Follow our step-by-step guide to identify your ideal inkjet

1

You can get a decent inkjet for under £50. With the minimum spec shown below, high-quality printing is possible, but slow. The actual print speed of inkjets can be half the quoted (maximum) speed on text documents, and even slower when printing graphics. Entry-level inkjets such as these are designed only for light use as they are flimsy and expensive to run.

2

Spending £80 will get you a much more capable printer that is either faster and better built or better at reproducing photos. If your priority is documents, you'll want double the minimum speed and half the print costs of the sub-£50 printer. Look for inkjets that can handle all your office media, including envelopes and labels.

3

If your priority is photos, speed is less important. Instead, choose a printer that can reproduce subtle tones well. Only hands-on testing, not specifications, will tell you this. Borderless printing (right up to the edge of the paper) should also be possible. Pay particular attention to running costs: photos use three times as much ink as regular colour documents.

4

Heavy-duty office inkjets can cost up to £1,000 and their build quality is improving. A duplex unit and A3 capability, starting at around £300, are also worth considering. Large, individually replaceable ink tanks can cut running costs.

5

Pricier photo printers allow you to print digital photos by plugging memory cards straight in – no PC is required. An LCD preview screen gives you more control over this.

FILL IN YOUR SPECS HERE

(Recommended minimum in grey)

PAGE SIZE: A4

QUOTED SPEED: 18ppm mono, 12ppm colour

PRICE PER PAGE: 4p mono, 8p colour

RESOLUTION: 1,200x4,800dpi

INK COLOURS: Four in two tanks

FEATURES:

HOTLIST INKJET PRINTER

HP
Photosmart 8250

RATING ★★★★★

PRICE £135 inc VAT

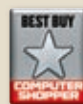
SUPPLIER www.dabs.comDETAILS www.hp.co.uk

The Photosmart 8250 produces excellent print quality on plain or coated paper. It's one of the fastest photo printers we've tested, but it also dashed off our draft text test at 18.5ppm. It has easy-to-use direct photo-printing features, and low running costs make it a superb all-rounder.



SPECIFICATIONS Six-colour inkjet, 4,800x1,200dpi maximum resolution, USB Hi-Speed and PictBridge USB interfaces. **Part code** Q3470B

HOTLIST INKJET PRINTER

HP
DeskJet 5940

RATING ★★★★★

PRICE £69 inc VAT

SUPPLIER www.misco.co.ukDETAILS www.hp.co.uk

A metal lid lends a touch of class to this mid-range inkjet, but the supplied 800-page black cartridge makes it incredibly good value. It's also very fast, reaching 20ppm in our draft text test.



Low mono running costs of 2.2p per page helped it eclipse the competition in our recent inkjet Labs test.

SPECIFICATIONS Four-colour inkjet, 4,800x1,200dpi maximum resolution, USB and PictBridge USB interfaces. **Part code** C9017B